User Manual of
C10 Series Repeaters

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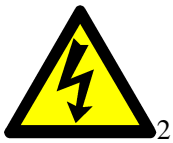
Chapter 1 Safety Warning

Users must follow the below principles:

1 Repeater should follow system requirement of communication equipment, assure good groundings and lightning protection.



2 The power supply voltage of repeater should meet the standards of security requirement; any repeater-operator can operate only after cutting power in advance. Only the professional can operate electrified.

3 Do not dismantle machine, maintain or displace accessories by yourself, because in this way, the equipment may be damaged or even get an electric shock.

4 Do not open the repeaer, touch the module of repeater, even not to open the cover of module to touch the electronic component, the components will be damaged due to electrostatic

5 Please keep away from heating-equipment, because the repeater will dissipate heat when working. And do not cover repeater with anything that influences heat-dissipation.

Chapter 2 Summary

In mobile communication, it is inevitable that macro-cell coverage cannot cover weak or dead zones; to use repeater is a good choice in these areas. Wide band consumer repeaters mainly applied in covering small blind and weak zones

C10 series repeater is a good choice for weak signal area of GSM system ,such as VIP rooms , offices, houses, restaurants, apartments, packing, etc.

3.1 Application

C10 series repeater enhances consumer satisfaction greatly with its integrated design, compact size, easy engineering and rapid installation and debugging,

Chapter 3 Specs and features

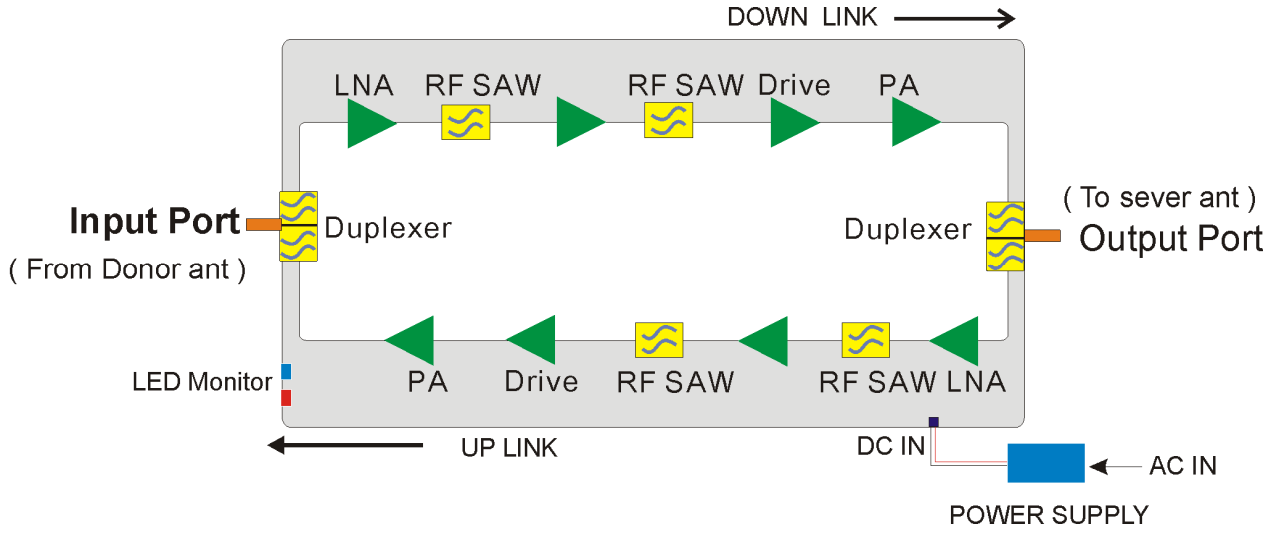
3.1 Product descriptions

(1) In Terminal: N- Female
(2) LED: To monitor the status of power on/off and normal operation
(3) Power Supply Terminal: External type AC-DC power supply
(Operating voltage: 9 V/2A)

3.2 Features

- Compact design and light weight, cost effectiveness
- LED indication for operation status.
- Selective band function to work on GSM support.
- Low power consumption, Low interference.
- Applicable to In-Building with medium or small size with Maximum coverage up to 1200 Square meters, such as VIP room, office, house, restaurants, apartments, parking.
- ALC to limit output power at specified power level and ensure stable coverage effect.

3.3 System diagram



3.4 Electrical Specification

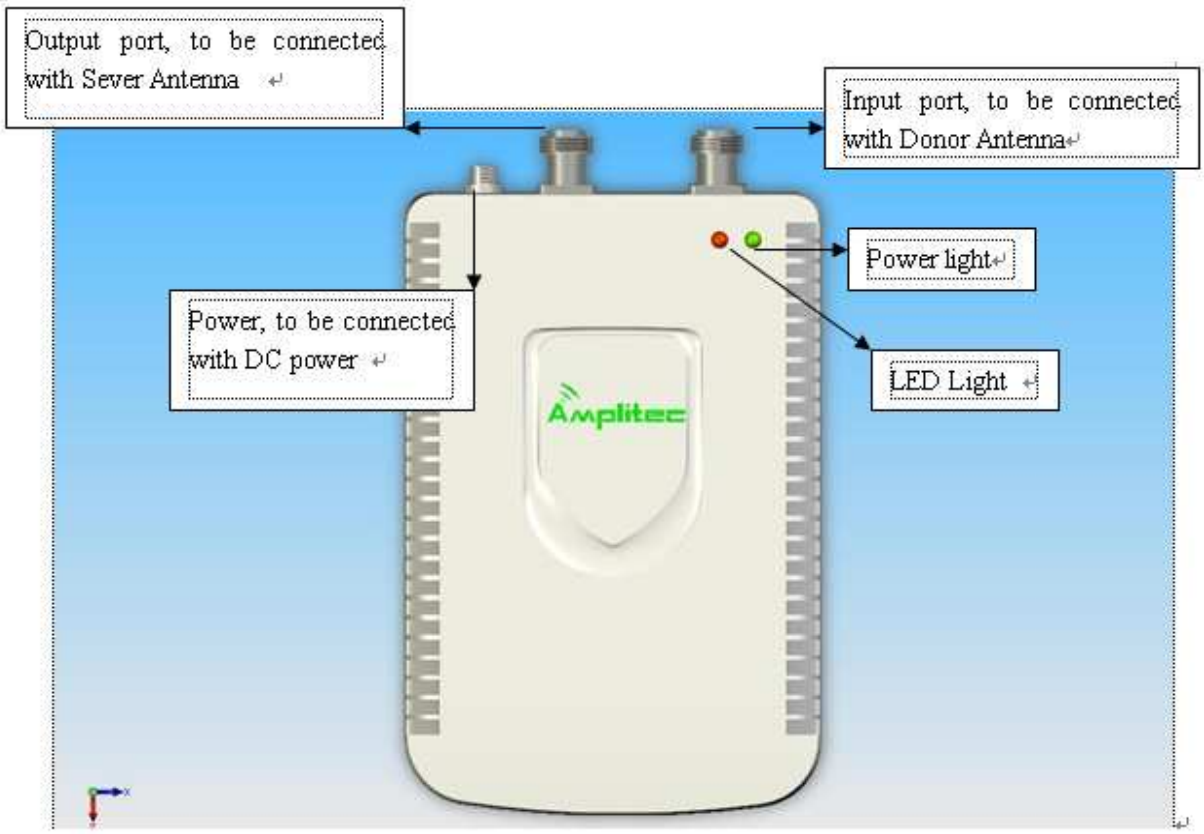
C10 series		
Electrical specification		**specification**
Frequency Range		GSM900,or GSM1800,or WCDMA
Output Power		UL□10dBm□DL□10dBm
Max.Gain		UL□60dB□DL□60dB
In-band Ripple		□6dB
Spurious Emission	9KHz~1GHz	□ -40dBm @ 3KHz
	1GHz~12.75GHz	□ -40dBm @ 3KHz
Noise Figure		□ 6dB
VSWR		□ 2
Group Delay		□0.5μs
Weight		□1.5Kg
Dimensions (D x W xH)		209*133*41mm
Environment Conditions		IP40
Impedance		50 Ohms
Power Supply		AC:120V; DC:9V2A Adapter
Working Temperature		-25□ to +55□
Humidity		5□-95□
2□Alarm		**specification**
LED indication	Power LED	DC ON/OFF
	Alarm LED	ALC 1~5dB,orange
		ALC 20~25dB,red

3.5Mechanical Specification

Environment Conditions	IP40
Weight	<1kg
Dimensions (W x H x D)	134*218*57mm
Operating Temperature	-10~50 ℃

3.6 Appearance Diagram

3.7 Ports

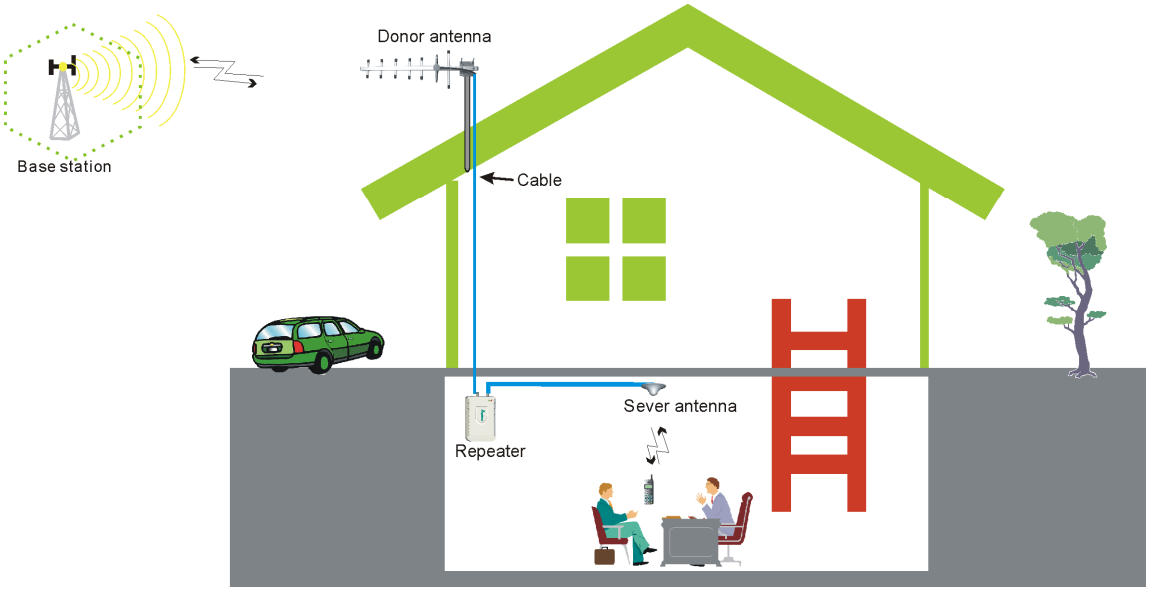

Output port, to be connected with Sever Antenna
Input port, to be connected with Donor Antenna
Power light
Power, to be connected with DC power
LED Light
Amplitec

Chapter 4 Installation

4.1 Installation requirements

C10 series repeaters are mainly applied as indoor coverage GSM system. After connection of equipment and antenna, the distance of them should be keep as far away as possible, it's better that there is a wall as the obstruct between them.

Repeaters



■ Position selection

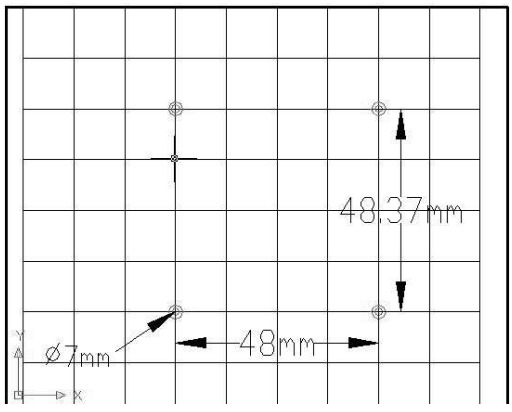
- ➢ Install in the place that is not easy to be reached by irrelevant people.
- ➢ Install at the place that is convenient for power supply and cabling
- ➢ Avoid heat source and moist environment

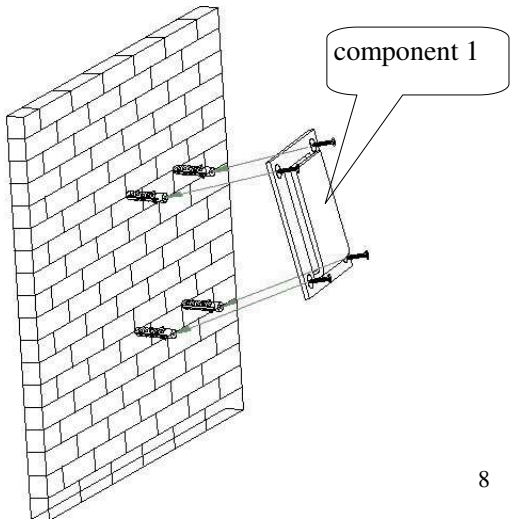
■ Power supply requirement

AC power supply of 9V/2A

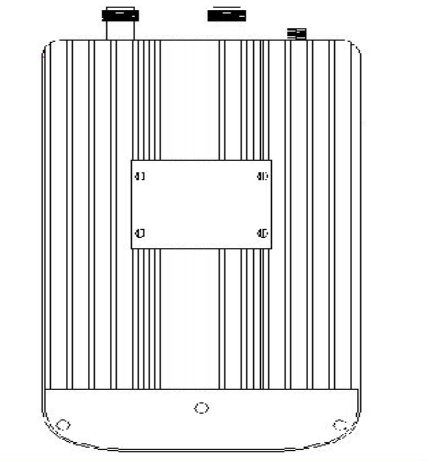
■ Installation

4.2 Installation

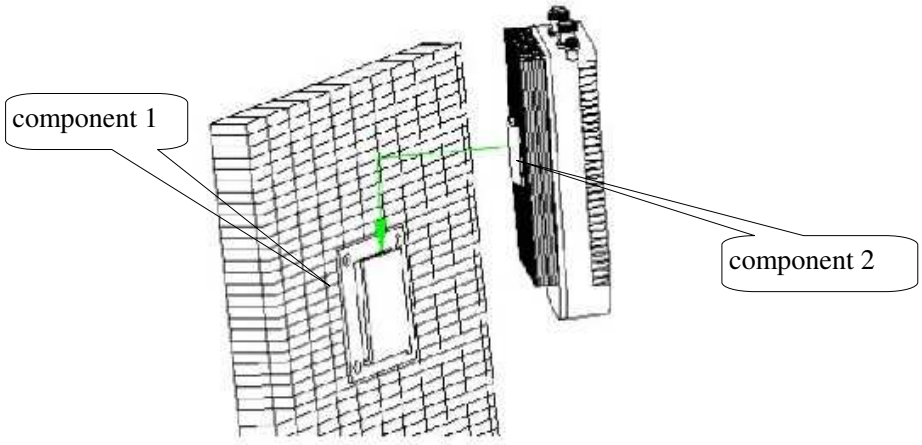




installation step 1



Installation step 2



Installation step 3

Installation Steps:

1 :Use percussion drill to make four Φ6 holes on the wall according to above hole diagram, fasten component 1 onto the wall.

2: Put the component 2 into component 1

4.3 Connection

- **Connection of RF cable**

Input Port: put the antenna outdoor, and try to put on the place where there is strong signal, then connect one adapter to BTS of equipment and assure good connection.

- **Power supply connection**

Please use three-pin plug to assure good grounding

Chapter 5 Repeater setting

Please check whether the connection of RF cable is correct (donor antenna connected to BTS port, service antenna connected to MS port), and whether every port is stable. After affirmation, please go along the followings:

5.1 Power supply connection

After power supply connection, check ALARM and POWER and PA failure indicators first.

- Status and definition of POWER indicators:

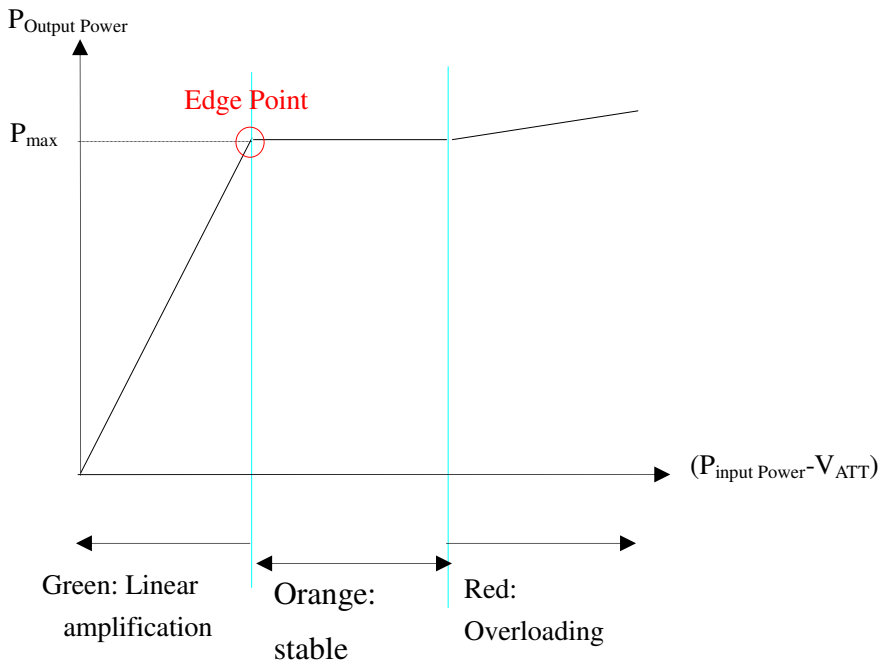
Status	Definition
green	Normal
off	DC power problem

- Status and definition of ALARM indicators:

Status	Definition of ALARM
green	Meaning: working in linearity
	attention: Input signals may be not enough
red	Meaning: overloading or self oscillation, strong input signals
	Attention: cut the connection of equipment and service antenna, then connect the MS port to load, if the red light changes to green or orange, which means the isolation of donor antenna and service antenna is not enough, then please adjust the isolation. If the red light still turning on that means over accepting of donor antenna or strong interference, then please adjust the place of donor antenna..
orange	Meaning: it is working in linearity
off	Repeater break down

5.2 Performance setting

✧ Curve chart of equipment working condition



Picture 3: Curve of output power, input signal and attenuation value

$P_{Output\ Powe:}$ output power

$P_{input\ Power:}$ input power

$V_{ATT:}$ attenuation vale

$P_{input\ Power}$ -$V_{ATT:}$ input power—attenuation value

P_{max}: output power rating

Chapter 6 Produce Maintenance

6.1 Operation and maintenance

- **Power supply**

Please make sure the voltage and frequency comply with the repeater requirement.

- **Component replacement**

Please do not maintain or replace components by yourself, otherwise may get an electric shock. Only the authorised professional can maintain and replace the components.

- **Waterproof and moist proof**

Please do not turn on or off the booster in moist environment when its door is opened.

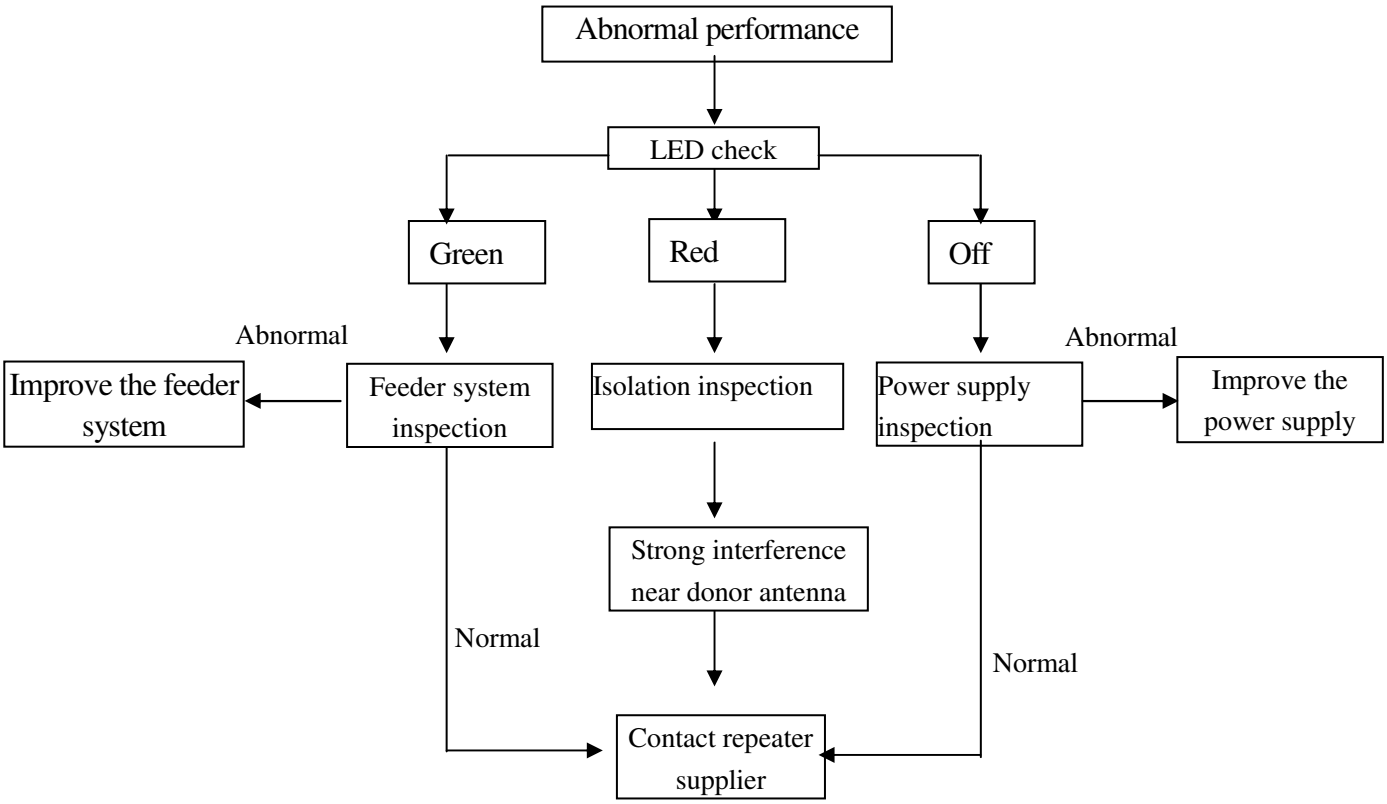
6.2 Emergency dealing

Switch off is recommended during following situations:

- The power supply is not normal
- Liquid flows into the equipment;
- Working conditions is not normal, (overheating, abnormal smelling, abnormal sundries)
- Closet damage
- performance decreasement
- near to fire
- flooding

6.3 Maintaining directions

Please check the booster step by step according to below process, to find out the problem with the repeater.



C10-GSM

Electrical specification		**specification**
Frequency Range	**GSM900**	UL:890~915MHz DL:935~960MHz
Max.Gain		UL≧60dB；DL≧60dB
Automatic Level Control		≧20dB
Gain Flatness		≦8dB
Output Power		≧10dBm
Intermodulation Products	9KHz~1GHz	≦ -36dBm@ 3KHz
	1GHz~12.75GHz	≦ -30dBm @ 3KHz
Spurious Emission	9KHz~1GHz	≦ -36dBm @ 3KHz
	1GHz~12.75GHz	≦ -30dBm @ 3KHz
Noise Figure		≦ 6dB
VSWR		≦2.5
Group Delay		≦1.5μs
Weight		≦1Kg
Environment Conditions		IP40
DC Supply		9V2A (AC:165V~265V,50/60Hz)
2、Alarm		**specification**
LED indication	Power LED	DC ON/OFF
	Alarm LED	ALC 1~5dB,orange
		ALC 20~25dB,red

Notified Body Number 1177

TIMCO ENGINEERING, Inc.

NOTIFIED BODY STATEMENT OF OPINION

R&TTE DIRECTIVE 1999/5/EC
Conformity assessment procedure Article 10(4) and Annex IV

DESCRIPTION OF THE PRODUCT

Manufacturer	:	Foshan Amplitec Tech Development Co., Ltd.
Address	:	No.1 Room, Second Floor, No.40, First East Tonghua Rd. Foshan City, Guangdong, China
Phone number	:	86-757-8332-3709
Product description	:	Mobile Phone Signal Amplifier
Intended use	:	GSM/WCDMA REPEATER
Product Specifications	:	See ANNEX 1
Brand	:	AMPLITEC
Type/Model number	:	C10,C10H,C15,C20,C10H-GD,C10H-GSM,C10H-DCS, C10H-WCDMA, C10-2B,C10-GW,C10-GSM,C10-DCS,C10-WCDMA,C10D-GDW,C10-GD,C15-GSM,C15-DCS,C15-WCDMA,C20-WCDMA,C20-GSM,C20-DCS

TECHNICAL CONSTRUCTION FILE

Issued by	:	Foshan Amplitec Tech Development Co., Ltd.
Address	:	No.1 Room, Second Floor, No.40, First East Tonghua Rd. Foshan City, Guangdong, China
Phone / Fax number	:	86-757-8332-3709 / 86-757-8312-3923
Signed by	:	LIU Sunping Project Manager
Date	:	09/20/2008
File Number	:	SZAGC288080801

TIMCO NOTIFIED BODY STATEMENT OF OPINION

Issued by	:	Notified Body 1177, TIMCO Engineering, Inc.
Date	:	October 9, 2008
Opinion number	:	TCF-2300CC8 (Original TCF-2248CC8)
On behalf of	:	The President of TIMCO Engineering, Inc.
Signature	:	Bruno Clavier
Name	:	Bruno Clavier

The device shall be marked as follows: CE 1177

THIS STATEMENT OF OPINION HAS NO ADDENDUM.

Based on the evidence presented in the Technical Construction File, TIMCO Engineering, Inc., as appointed Notified Body (number 1177), has given a positive opinion that the product described is in conformity with the essential requirements Article 3.2, 3.1a, and 3.1b of R&TTE Directive 1999/5/EC.

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An agency of the U.S. Commerce Department

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ANNEX 1 TO STATEMENT OF OPINION NUMBER: TCF-2300CC8

Date : October 9, 2008

PRODUCT SPECIFICATIONS

RF output power (Cond.)	:	UL: 5dBm, DL: 10dBm
Frequency band	:	UL: 890-915MHz, DL: 935-960MHz
Modulation	:	GMSK, CDMA
Antenna type	:	Integral

RF output power (Cond.)	:	UL: 5dBm, DL: 10dBm
Frequency band	:	UL: 1710-1785MHz; DL: 1805-1880MHz
Modulation	:	GMSK, CDMA
Antenna type	:	Integral

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